

Species of the genus *Dioryche* similar to *D. cuprina* (Dejean, 1929) comb. nov. (Coleoptera: Carabidae: Harpalini)

Виды рода *Dioryche*, сходные с *D. cuprina* (Dejean, 1929) comb. nov. (Coleoptera: Carabidae: Harpalini)

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Based on examination of the type specimens, *Selenophorus cuprinus* Dejean, 1829 and *Selenophorus lucidulus* Dejean, 1829 are transferred to the genus *Dioryche* MacLeay, 1825. These species are redescribed and new data on their distribution are provided. Three new species are described: *D. (s. str.) dravidana* sp. nov. from Southern India, *D. (s. str.) nitidula* sp. nov. from Northern India and *D. (s. str.) subrecta* sp. nov. from Pakistan, Northern India and Nepal. The following new synonyms are established: *D. cuprina* (Dejean, 1829) comb. nov. = *Harpalus colombensis* Nietner, 1857, syn. nov. = *Cardiaderus scitus* Walker, 1858, syn. nov.; *D. lucidula* (Dejean, 1829) comb. nov. = *Platymetopus colombensis* var. *braccatus* Bates, 1891, syn. nov. Lectotypes are designated for *Selenophorus cuprinus* Dejean, 1829 and *Platymetopus colombensis* var. *braccatus* Bates, 1891. The taxonomic position of *Dioryche* among other genera of the Selenophori group is discussed.

Selenophorus cuprinus Dejean, 1829 и *Selenophorus lucidulus* Dejean, 1829 на основании изучения типовых экземпляров перенесены в род *Dioryche* MacLeay, 1825. Сделаны переописания этих видов, и приведены данные об их распространении. Описаны три новых вида: *D. (s. str.) dravidana* sp. nov. из южной Индии, *D. (s. str.) nitidula* sp. nov. из северной Индии и *D. (s. str.) subrecta* sp. nov. из Пакистана, северной Индии и Непала. Установлены новые синонимы: *D. cuprina* (Dejean, 1829) comb. nov. = *Harpalus colombensis* Nietner, 1857, syn. nov. = *Cardiaderus scitus* Walker, 1858, syn. nov.; *D. lucidula* (Dejean, 1829) comb. nov. = *Platymetopus colombensis* var. *braccatus* Bates, 1891, syn. nov. Для *Selenophorus cuprinus* Dejean, 1829 и *Platymetopus colombensis* var. *braccatus* Bates, 1891 обозначены лектотипы. Обсуждается таксономическое положение *Dioryche* среди других родов группы Selenophori.

Key words: ground-beetles, taxonomy, distribution, Oriental Region, Coleoptera, Carabidae, Harpalini, Harpalina, Selenophori, *Dioryche*, new species, new combinations, new synonyms

Ключевые слова: жужелицы, таксономия, распространение, Ориентальная область, Coleoptera, Carabidae, Harpalini, Harpalina, Selenophori, *Dioryche*, новые виды, новые сочетания, новые синонимы

INTRODUCTION

Dioryche MacLeay, 1825 is a moderately diverse selenophorine genus of the subtribe Harpalina, with 15 described species (Lorenz, 2005). The geographical range of the

genus lies within the Oriental Region and occupies Pakistan, India, Sri Lanka, Maldives, Nepal, Bhutan, Burma, southern China (Yunnan, Taiwan, Hainan, Hong Kong, Jiangxi), Laos, Vietnam, Thailand, Cambodia, Malaysia, Indonesia (Borneo, Suma-

tra, Java, Celebes, Sumba, Timor), and the Philippines. Distribution of most species is restricted to mainland tropical Asia. The main distinctive features of the genus *Dioryche* include a rather deeply emarginate clypeal apex bordered along its entire length with the labral base visible in the emargination, and finely, not densely punctate elytra with very short and fine setae on two or three external intervals. The genus is also characterized by the following morphological characters: frontal foveae without clypeo-ocular prolongations, mentum without medial tooth, mentum and submentum separated by complete transverse suture, epilobes narrow, ligular sclerite narrow, paraglossae wide, labial basal palpomere not carinate, elytral intervals 3, 5, and 7 each with rows of setigerous pores, anal sternite with two pairs of setae in both sexes, metacoxa without posteromedial pore, protibia ventrally sulcate along entire length, apical spur of protibia slender, lanceolate, tarsi with sparse or moderately dense fine short setae dorsally, apical stylomere with one or two proximal dorsal setae, median lobe of aedeagus with apical orifice extended to basal bulb and with several separate spines in internal sac.

The taxonomic position of *Dioryche* among other genera of the Selenophori group is still not clear. Noonan (1985b) treated *Dioryche* as a sister group of the Oriental genus *Kareya* Andrewes, 1919 based on the apomorphy of a deeply emarginate clypeal apex shared by these genera. In my opinion, this apomorphy evolved independently in *Dioryche* and *Kareya*, because the genera are very distinct in other characters and do not appear to be closely related. Besides the characters discriminating *Kareya* from *Dioryche* given by Noonan (1985a) (frontal foveae with clypeo-ocular prolongations, denser setae on elytra, and pronotal basal angles indistinct, widely rounded), the following distinctive characters can be named: clypeal apex not bordered, epilobes widened apically, mentum with obtuse medial tooth, apical stylomere

without proximal dorsal setae, and median lobe of aedeagus without spines in internal sac. Moreover, more or less deep emargination of the clypeal apex occurs in different groups of Selenophori, not only in *Dioryche* and *Kareya* (for example, in *Amblygnathus* Dejean, 1829, some members of *Afromizonus* Basilewsky, 1947, *Prakasha* Andrewes, 1919, *Parophonus* Ganglbauer, 1892, *Siopelus* Murray, 1859 and *Laparhethes* Jeannel, 1946). Considering sufficient morphological differences between *Dioryche* and *Kareya*, I can agree with Lorenz (1998, 2005) who treated *Dioryche* as a separate genus and *Kareya* as a subgenus of the genus *Parophonus*, unfortunately without any explanations. With densely and uniformly punctate elytra, *Kareya* is indeed more similar and apparently more closely related to *Parophonus* than to *Dioryche*. Within *Parophonus*, *Kareya* is particularly similar to the Afrotropical subgenus *Paratheles* Basilewsky, 1950, which also has the clypeal apex rather deeply emarginate and not bordered. In combination of characters, *Dioryche* and the rather diverse Afro-Oriental genus *Siopelus* are most similar. Some members of *Siopelus* demonstrate nearly all the characters diagnostic to *Dioryche* except for the clypeal apex which in *Siopelus* is not bordered and at most only moderately emarginate.

The present paper deals with the taxonomy of five species of *Dioryche*, three of which are described as new. All the five species have the elytral intervals near the apex convex and of nearly the same width and therefore belong to the nominotypical subgenus sensu Schaeffer (1935). Although all these species are very similar in appearance, I am not sure that they constitute a monophyletic group because some species (particularly *D. subrecta* sp. nov.) are very distinct in the male genitalia. Among the species of the subgenus, these five ones may be recognized by small body size (5.8–7.4 mm) and elytra with a very short parascutellar striole. All the other members of the nominotypical subgenus (*D.*

torta MacLeay, 1825; *D. convexa* Andrewes, 1924; *D. longula* Bates, 1892; *D. yunnana* Kataev, 2002; *D. longula* Bates, 1892; and *D. melanauges* Andrewes, 1922) are larger and have a much longer parascutellar striae (notably longer than the width of the second interval).

MATERIAL AND METHODS

The following abbreviations are used for the depositories of the specimens examined: CBM – the working collection of M. Baehr at the Zoologische Staatssammlung, München, Germany; cFCCH – collection of S. Facchini, Piacenza, Italy; cSCHM – collection of J. Schmidt, Marburg, Germany; cWR – collection of D.W. Wräse, Berlin, Germany; cZR – collection of V. Zieris, Pardubice, Czech Republic; FMNH – Field Museum of Natural History, Chicago, USA; MIZW – Muzeum i Instytut Zoologii, Polskiej Akademii nauk, Warszawa, Poland; MNHN – Muséum National d'Histoire Naturelle, Paris, France; MPU – Moscow Pedagogical University, Moscow, Russia; NME – Naturkundemuseum Erfurt, Germany; ZIN – Zoological Institute, Russian Academy of Sciences, St Petersburg, Russia; ZMB – Museum für Naturkunde an der Humboldt-Universität, Berlin, Germany.

Measurements were taken as follows: body length, measured from the anterior margin of the clypeus to the elytral apex; width of head, measured as the maximum linear distance across the head, including the compound eyes (HWmax), and as the minimum linear distance across the neck constriction just behind the eyes (HWmin); length of pronotum (PL), measured along its median line; length of elytra (EL), measured from the basal border in the scutellar region to the apex of the sutural angle; maximum width of pronotum (PWmax) and of elytra (EW), both measured at their broadest point; minimum width of pronotum (PWmin), measured at its narrowest point near the hind angles.

TAXONOMY

Order COLEOPTERA

Family CARABIDAE

Tribe HARPALINI

Genus *Dioryche* MacLeay, 1825

Subgenus *Dioryche* MacLeay, 1825

Dioryche (Dioryche) cuprina

(Dejean, 1829) comb. nov.

(Figs 1, 6, 8, 9, 14, 15)

Selenophorus cuprinus Dejean, 1829: 96. Type locality: "Antilles, ... ile Saint-Barthelemy" (indicated erroneously, see Remarks below).

Harpalus (Selenophorus) colombensis Nietner, 1857: 373, syn. nov. Type locality: "prope Colombo", Sri Lanka.

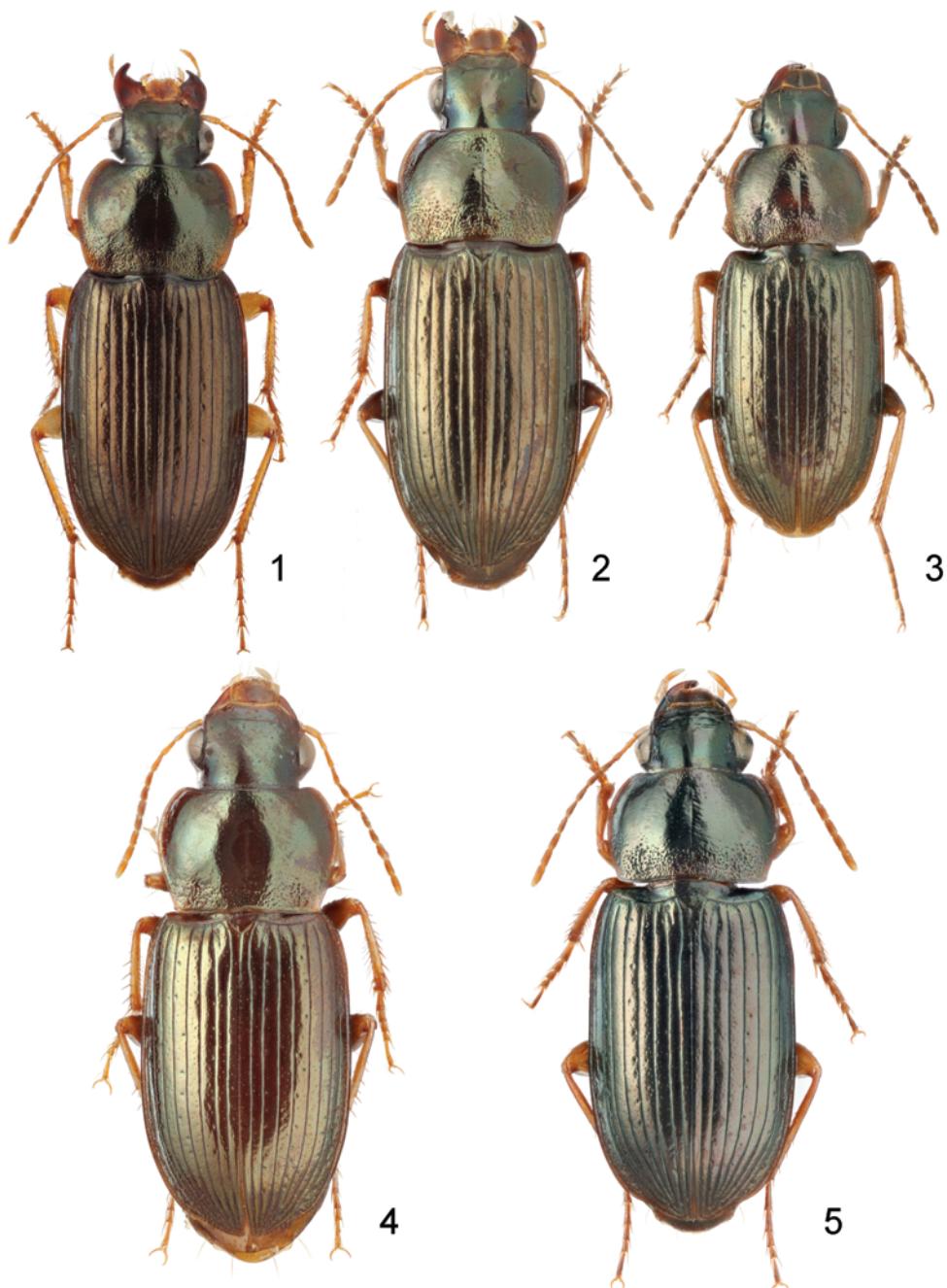
Cardiaderus scitus Walker, 1858: 203, syn. nov. Type locality: "Ceylon" (= Sri Lanka).

Platymetopus colombensis: Bates, 1886: 76.

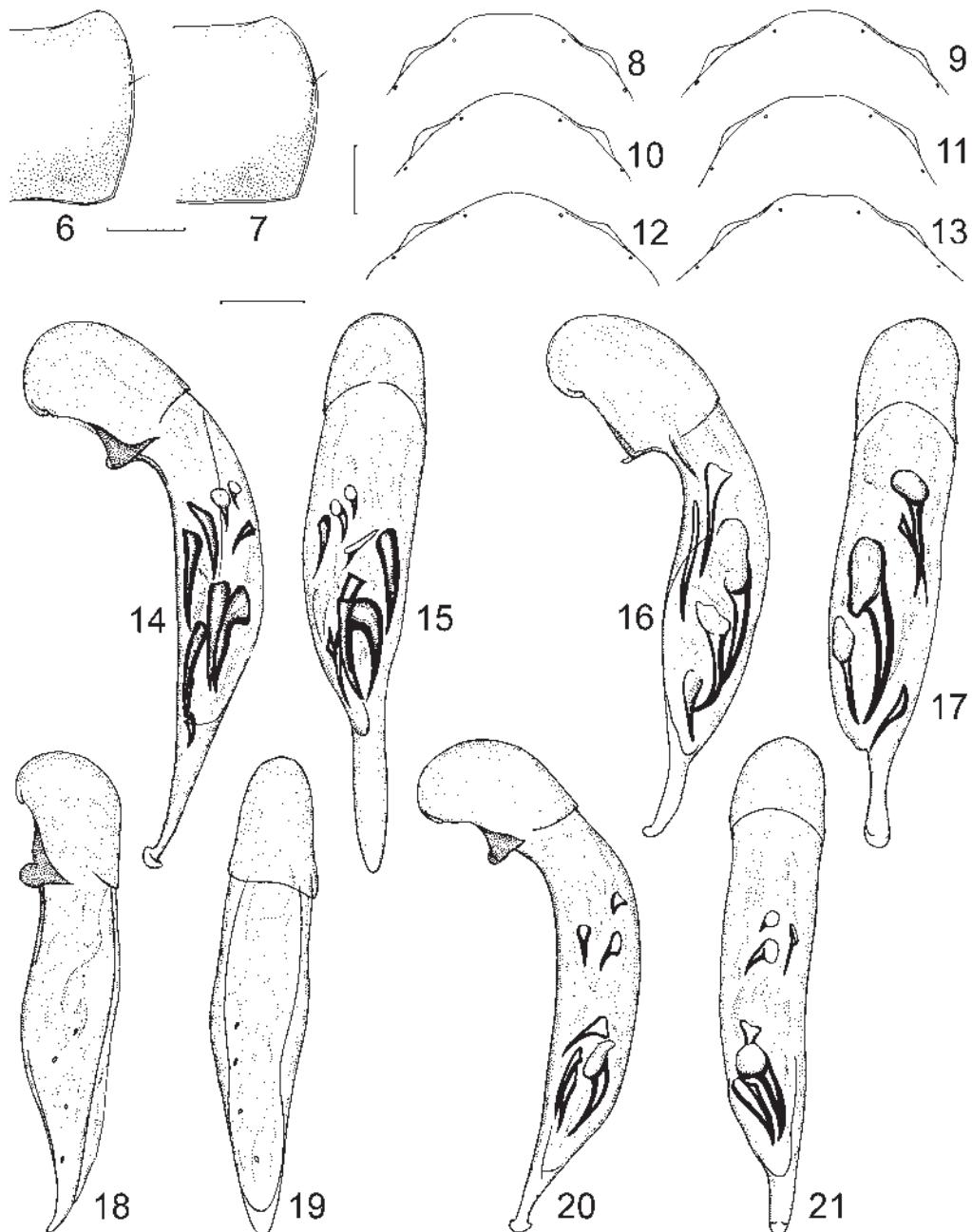
Dioryche colombensis: Andrewes, 1921: 342.

Lectotype (present designation) of *Selenophorus cuprinus* Dejean. Female, labelled "♀", "cuprinus mihi", in Inf. S. Barthelemy" [Dejean's handwriting], "Schönerr.", "Ex Musaeo Chauvoir", also with bottom label "cuprinus Dej., Coromandel, c. Dejean" (MNHN).

Syntypes (?) of *Harpalus colombensis* Nietner. **Sri Lanka:** 1 male, "Ceylon, Nietn." [handwritten], "52785", "Dioryche colombensis" Ntn. [pencil, handwritten], "Hist.-Coll. (Coleoptera), Nr. 52785, *Harpalus* spec. Ceylan, Nietner, Zool. Mus. Berlin" [on yellow paper, print], "Dioryche colombensis" (Nietner), Det. N. Ito, 1996" (ZMB); 1 male, 1 female, "52785", "Ceylan, Nietner" [handwritten], "Hist.-Coll. (Coleoptera), Nr. 52785, *Harpalus* spec., Ceylan, Nietner, Zool. Mus. Berlin" [on yellow paper, print], "Dioryche colombensis" (Nietner), Det. N. Ito, 1996" (ZMB); male, "Ceylon, Nietner" [handwritten], "Harpalus pulchellus" Nietn.** [handwritten], "Hist.-Coll. (Coleoptera), Nr. 52785, *Harpalus* spec. Ceylan, Nietner, Zool. Mus. Berlin" [on yellow paper, print], "Dioryche colombensis" (Nietner), Det. N. Ito, 1996" (ZMB); 1 male, 1 female, "Ceylon, Nietner", "Dioryche colombensis" (Nietner), Det. N. Ito, 1996" (ZMB); 1 male, same as above, plus "coll. Thieme" (ZMB); 1 female, "Ceylon, Nietner S." [print / handwritten], "Dioryche pulchellus n. , x" [handwritten], "134", "Dioryche co-



Figs 1–5. *Dioryche*; habitus. 1, *D. cuprina*; 2, *D. lucidula*; 3, *D. dravidana* sp. nov.; 4, *D. nitidula* sp. nov.; 5, *D. subrecta* sp. nov. Scale bar 0.5 mm.



Figs 6–21. *Dioryche*. Right half of pronotum: 6, *D. cuprina* (India, Pondicherry); 7, *D. subrecta* sp. nov. (paratype, Nepal); apex of anal sternite, ventral view: 8, 9, *D. cuprina* (India, Pondicherry); 10, *D. lucidula* (Uttar Pradesh); 11, *D. dravidana* sp. nov. (holotype); 12, *D. nitidula* sp. nov. (paratype); 13, *D. subrecta* sp. nov. (paratype, India); male (8–13), female (9); median lobe of aedeagus: 14, 15, *D. cuprina* (? syntype, Sri Lanka); 16, 17, *D. nitidula* sp. nov. (holotype); 18, 19, *D. subrecta* sp. nov. (holotype); 20, 21, *D. dravidana* sp. nov. (holotype); view from left side (14, 16, 18, 20); dorsal view (15, 17, 19, 21). Scale bars 1 mm (6–7), 0.5 mm (8–21).

lombensis Nietn., H.E. Andrewes det." [handwritten / print], "Mus. Zool. Polonicum, Warszawa, 12/45" [print], "Inst. Zool. P.A.N. Warszawa, Cotypus, Nr. 1434" [on red paper, print], "MIZ 237157" (MIZW); 1 female, same as above, but "MIZ 237155" (MIZW); 1 female, same as above, but "133" and "MIZ 237156" (MIZW); 1 male, same as above, but "132" and "MIZ 237158" (MIZW); 1 female, "Ceylon, Nietner S." [print / handwritten], "Dioryche amarus Dohrn." [handwritten], "Dioryche colombensis" Nirtn., H.E. Andrewes det.", "129", "Mus. Zool. Polonicum, Warszawa, 12/45", "Inst. Zool. P.A.N. Warszawa, Cotypus, Nr. 1434", "MIZ 237160" (MIZW); 1 female, same as above, but "131" and "237161" (MIZW); 1 male, same as above, but "130" and "237159" (MIZW).

Additional material examined. Sri Lanka: 1 female, *North Central Prov.*, Anuradhapura Distr., Anuradhapura, 18 July 2001, P. Rudich & J. Kny leg. (cWR); 1 male, *Sabaragamuwa Prov.*, Kitugala, forest floor, 20 Feb. 1997, P. Udvichenko leg. (MPU); 3 males, 1 female, *North Western Prov.*, Wilpattu National Park, Talawila, at light, 2 Oct. 1982, G. Medvedev leg. (ZIN); 1 male, "Ceylon" (ZIN). India: 2 males, *Goa*, 21 March 1994, T. Vereschagina leg. (ZIN); 1 male, 1 female, *Kerala*, near Kallar, 30 km NE Trivandrum, 400 m, Kallar River, $8^{\circ}45'N$ $77^{\circ}05'E$, 29 June 1999, Z. Kejval & M. Trýzna leg. (cFCCH); 1 female, "Calicut [= Kozhikode], 20–25 juin 1901", "Cote de Malabar, M. Maindron" (ZIN); 1 male, "Kanara", "Andrewes Coll., B.M. 1945–97." (ZIN); 1 male, *Union Territory of Puducherry*, "Pondichery, Aout 1901", "Coromandel, M. Maindron", "Dioryche colombensis" Nietner, V. Lutshnik d." (ZIN); 2 females, "South India, Pondicherry State, Karikal", "Dioryche braccata" (Bates), Det. N. Ito 1996" (ZMB); 1 male, "S-India, Pondicherry State, Karikal, III.1966, P.S.N.", "Dioryche braccata" (Bates), Det. N. Ito 1996" (ZMB); 1 male, 2 females, "S. Indien, Pondicherry, Karikal, 8.68", "Dioryche braccata" (Bates), Det. N. Ito 1996" (ZMB); 1 female, "Malabar" (ZIN); 1 male, 1 female, "Mahe, Juillet, 1901", "Cote de Malabar, M. Maindron leg." (ZIN); 2 males, 1 female, *Tamil Nadu*, Coimbatore, Dec. 1966, P. Susai Nathan leg. (FMNH); 1 male, "Madras [= Chennai], India mer., IX.1984, Ing. Pokorny lgt.", "Dioryche braccata" (Bates), Det. N. Ito 1996" (cWR); 1 male, Pondicherry, 10 km N Auroville, 2 Feb. – 2 March 2011, F. Burger leg. (NME). Nepal: 1 male, *Koshi Zone*, Hile, ca 2000 m, 7–8 June

1999, V. Patrikeev leg. (MPU); 1 male, 1 female, "Nepal-Himal, Kali-Gandaki-Fluss zw. Tatopani und Beni, ca 1000 m", 29 Oct. 1992, J. Schmidt leg. (cSCHM); 1 male, *Bheri Zone*, Banke Distr., Nepalganj, Hotel Kitchen Hut, 140 m, $28^{\circ}04'97'N$, $81^{\circ}38'56'E$, at light, "#02", 23–25 June 2011, M. Hartmann leg. (NME). Thailand: 1 female, *Phetchaburi Prov.*, Cha-Am Distr., "am Meer", June 1991, W. Marggi leg. (cWR); 1 female, *Uthai Thani Prov.*, Lan Sak Distr., 25 km NW Lansak, 65 km NW Uthai Thani, June 1990, Thielen leg. (cSCHM).

Diagnosis. Among similar species, *D. cuprina* can be recognized by a combination of the following characters: microsculpture on head and pronotum is visible throughout, rather distinct; pronotum is deeply emarginate anteriorly and with the comparatively wide lateral depressions in their apical portion; elytral basal border is meeting the lateral margin at nearly right angle; femora are brownish yellow, not infuscate; apex of anal sternite is slightly truncate in male; median lobe of aedeagus is with the long terminal lamella and large apical capitulum.

Description. Body length 6.0–7.4 mm, width 2.3–2.9 mm. Dorsal habitus as in Fig. 1.

Body brownish black or reddish black, in many specimens with light copper or green metallic lustre on head and pronotum and in some specimens also on elytra. Labrum entirely or externally, base of mandibles and very narrow lateral margins of pronotum usually reddish brown. Palpi, antennae and legs in most specimens unicolorous, brownish yellow, in some specimens antennomeres 2–11 or 3–11 and tarsi slightly infuscate.

Head moderately sized (HW_{max}/PW_{max} = 0.68–0.72 and HW_{min}/PW_{max} = 0.49–0.53 in males, and HW_{max}/PW_{max} = 0.69–0.73 and HW_{min}/PW_{min} = 0.54–0.58 in females), smooth or finely and sparsely punctate along inner margin of eyes. Eyes rather convex (HW_{max}/HW_{min} = 1.23–1.45), separated from buccal fissure ventrally by distance equal to or slightly greater than width of antennomere 1. Tempora moderately long, somewhat convex, rather abruptly sloped to

neck. Labrum slightly concave anteriorly. Frontal suture slightly deepened. Ligular sclerite very narrow, not widened apically. Paraglossae wide, much extended beyond ligular sclerite. Antennae slender, surpassing pronotal base by one apical antennomere. Middle antennomeres (5–8) about twice as long as wide. Dorsal microsculpture visible throughout, consisting of distinct, more or less isodiametric meshes.

Pronotum (PW_{max}/PL = 1.40–1.50), widest before middle and behind lateral setigerous pore (PW_{max}/PW_{min} = 1.16–1.24), with sides either rather evenly rounded along entire length or almost rectilinearly converging (very widely rounded) basally. Apical margin rather deeply emarginate, bordered only laterally; basal margin concave medially, rounded laterally, bordered along entire length, slightly longer than apical margin and approximately equal to elytral base between humeral angles. Apical angles markedly protruding, rounded at apex. Basal angles obtuse, with tiny obtuse denticle at apex. Pronotal basal edge glabrous. Lateral depressions (Fig. 2) beginning at apical angles, moderately wide apically, notably widened behind lateral setigerous pore and fused basally with wide latero-basal depressions. Basal foveae shallow, elongate, weakly delimited within latero-basal depressions. Pronotal disc weakly convex and evenly sloped to lateral depressions. Basal area between latero-basal depressions convex or slightly depressed. Pronotal surface finely, densely and irregularly punctate basally and along sides (many punctures confluent) and more sparsely punctate along apical margin; central part of disc either smooth or with scattered fine punctures; setae in punctures very short and hardly visible. Microsculpture visible throughout, consisting of distinct meshes, isodiametric along margins and weakly transverse, occasionally slightly obliterate, in central portion of disc.

Elytra moderately convex, elongate (in male, EL/EW = 1.50–1.62, EL/PL = 2.64–2.77, EW/PW_{max} = 1.15–1.21; in female,

these indices 1.51–1.59, 2.66–2.84 and 1.18–1.24, respectively), widest at middle, very widely rounded or almost parallel at sides. Shoulders angulate, each with tiny denticle at apex (in most specimens visible only from behind). Elytral sides rounded just behind shoulders. Subapical sinuation moderately deep, without denticle at base. Sutural angle acute, in both sexes blunt at apex. Basal border glabrous, strongly and rather evenly sinuate along entire length, meeting lateral margin at nearly right angle. Striae impunctate, superficial or slightly impressed on disc and deepened before apex. Parascutellar striole short, at most as long as width of second interval basally, with basal pore. Intervals largely wide and flat (in some specimens weakly convex), narrow and markedly convex before apex. All intervals near apex approximately equal in width. Intervals finely and sparsely punctate; punctuation on lateral intervals denser than on inner ones. Two or three lateral intervals covered with very short and fine setae. Third, fifth and seventh intervals each with longitudinal row of distinct dorsal setigerous pores mostly not associated with striae (pore diameter half to one-third as great as width of interval). Lateral series of umbilicate setigerous pores widely interrupted at middle, and posterior group of pores divided in two subgroups (preapical and apical), each consisting of four and three pores respectively; in some specimens fourth pore of preapical group slightly separated from first, second and third pores. Dorsal microsculpture in both sexes visible throughout, consisting of distinct isodiametric meshes.

Hind wings fully developed.

All visible abdominal sternites, in addition to obligatory fixed setae, covered with very short scattered setae. Apex of anal sternite subtruncate in male (Fig. 8) and rounded in female (Fig. 9).

Metacoxae finely punctulate and finely setose, without any additional setigerous pores. Metafemur with two setigerous pores at hind margin. Tarsi clearly setose dorsally.

Metatarsomere 1 slender, approximately equal to metatarsomeres 2+3. In male, pro- and mesotarsomeres 1–4 comparatively weakly dilated, with biseriate adhesive vestiture ventrally; mesotarsomere 1 as long as mesotarsomeres 2+3 and with adhesive scales only in apical half.

Female genitalia (Figs 32, 33): hemisternite with three thick setae distally. Basal stylomere with one long seta latero-distally. Apical stylomere comparatively long and weakly curved, with one long and thin proximal seta at dorsal margin of scrobe.

Aedeagus: median lobe (Figs 14, 15) arcuate, with apex curved ventrad and with comparatively large oblique apical capitulum protruding ventrally and dorsally (lateral aspect); dorsoapical flange situated more distally than ventroapical one. Terminal lamella long, in dorsal aspect about 3.5–4.0 times as long as wide, slightly rounded at sides, widest at middle and evenly narrowed to apex. Internal sac with group of eight to ten large and moderately-sized spines.

Distribution. Widely distributed over Southern Asia from Sri Lanka through India and Nepal to Thailand.

Remarks. According to the original description (Dejean, 1929), *Selenophorus cuprinus* was described on the basis of the specimens collected in Saint Barthélemy, the Antilles. Subsequent authors treated this name as a synonym of *S. discopunctatus* Dejean, 1829 (see, for example, Putzeys, 1878; Erwin & Sims, 1984; Bousquet & La-rochelle, 1993; Lorenz, 1998, 2005) which ranges over Middle and South America, the Antilles and Florida. However, examination of the type specimen of *S. cuprinus* has shown that this taxon is not a synonym of *S. discopunctatus*, but belongs to the Oriental genus *Dioryche* and is conspecific with *D. colombensis*, a species rather widely distributed in the Oriental Region from Sri Lanka to Thailand. It is evident that the type locality of *S. cuprinus* was indicated by Dejean erroneously, and the type specimens actually originated from the Oriental Region, perhaps from “Coromandel”, South

India, as it was indicated on the bottom label of the type in the former Chaudoir's collection (MNHN; see Type material). Thus I treat *D. cuprina* **comb. nov.** as a senior synonym of *D. colombensis* and accordingly as a valid name of this species.

In the original description of *Harpalus colombensis*, Nietner (1857) noted that the species was abundant in environments of Colombo. I have examined 14 specimens from the former Nietner's collection (ZMB and MIZW) which may be syntypes (see Type material). All these specimens conform with the traditional treatment of *D. colombensis*, but they have not original Nietner's labels with this name. The names “*Harpalus pulchellus* Nietner” and “*Dioryche amarus* Dohrn” attached to some specimens of this series have never been published. According to Andrewes (1927), who also examined the specimens mentioned, the types of *Harpalus colombensis* should be considered missing.

Cardiaderus scitus was synonymized with *D. colombensis* by Bates (1886) based on the examination of Walker's type at the British Museum (now the Natural History Museum, London).

Dioryche (Dioryche) lucidula

(Dejean, 1829) **comb. nov.**

(Figs 2, 10, 22–25, 30, 31)

Selenophorus lucidulus Dejean, 1829: 95. Type locality: “Antilles” (indicated erroneously, see Remarks below).

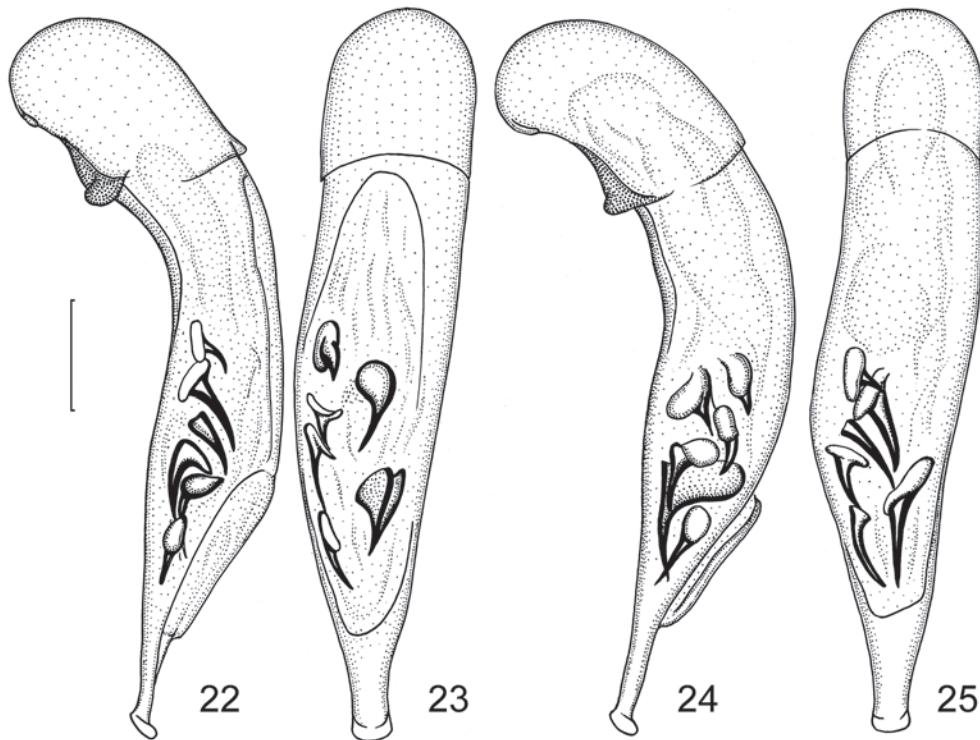
Platymetopus colombensis var. *braccatus* Bates, 1891: cccxxx, **syn. nov.** Type locality: “Kon-bir; Tetara”, Chota-Nagpore, India.

Dioryche colombensis var. *braccatus*: Andrewes, 1926: 68.

Dioryche braccatus: Schauberger, 1934: 10.

Holotype of *Selenophorus lucidulus* Dejean. Male, labelled “♂”, “*lucidulus* m.” [Dejean's handwriting], “*Selenophorus*” [Chaudoir's handwriting], “Ex Musaeo Chaudoir” (MNHN).

Lectotype (present designation) of *Platymetopus colombensis* var. *braccatus* Bates. Male, labelled “Chota-Nagpure, Bengal”, “*Colombensis* var. *braccata* Bates [Bates' handwriting]” (MNHN).



Figs 22–25. *Dioryche lucidula*; median lobe of aedeagus. 22, 23, holotype; 24, 25, lectotype of *Platymetopus colombensis* var. *braccatus*. View from left side (22, 24); dorsal view (23, 25). Scale bar 0.5 mm.

Additional material examined. **Pakistan:** 1 female, *Khyber-Pakhtunkhwa*, Besham, May 1993, S. Prepsl leg. (cZR). **India:** 1 male, *Delhi Union Territory*, New Delhi, Aug. 1986, Werner leg., “*Dioryche braccata* (Bates), Det. N. Ito 1996” (cWR); 1 male, *Rajasthan*, Jodhpur, 20 Aug. 1989, S. Toms leg. (ZIN); 2 males, *Madhya Pradesh*, Panna National Park, Aug. 1988, Werner leg. (CBM; ZIN); 1 female, same as above, plus “*Dioryche braccata* (Bates), Det. N. Ito 1996” (cWR); 1 male, Khujuraho, 8 June 1989, R. Schuh leg., “*Dioryche braccata* (Bates), det. D.W. Wrase, 2005” (cWR); 1 female, *Maharashtra*, “*Nagpore*”, “*Dioryche braccata* (Bates), Det. N. Ito 1996” (ZMB); 2 males, 1 female, *Uttar Pradesh*, Karnaprayag env., 770 m, 19–21 July 1994, M. Valenta leg. (cFCCH; ZIN); 1 male, 2 females, same as above, but 20 July 1994 (cFCCH); 2 males, Haridvar-Chila, 300 m, 5–14 Aug. 1994, M. Valenta leg. (cFCCH); 2 females, same as above, but 330 m, 9–14 Sept. 1994, M. Snižek leg. (cFCCH); 1 female, Jhansi Distr., Babina, 950 m, Aug. 1987 (cWR); 2 males, 2 females, Rishikesh,

Aug. 1988, Werner leg. (CBM); 2 males, same as above, plus “*Dioryche braccata* (Bates), det. D.W. Wrase, 2009” (cWR); 3 females, same as above, but July 1986, “*Dioryche braccata* (Bates), Det. N. Ito 1996” (cWR); 1 male, same as above, but 450 m (cWR); 2 females, same as above, but 350 m, 5–7 Aug. 1989, Hiermeier leg. (CBM); 3 males, 1 female, same as above, but 500 m, 3–10 July 1991, A. Richter leg., “*Dioryche braccata* (Bates), det. D.W. Wrase, 2003” (cWR); 1 male, same as above, but 3 July 1989, A. Riedel leg. (cWR); 6 males, 3 females, “*Shiwalik-Kette, N. Seite*”, 13 km SW Dehra Dun, 600 m, 20–21 Aug. 1985, F. Hieke leg., “*Dioryche braccata* (Bates), Det. N. Ito 1996” (ZMB); 1 female, Himalaya, Dehra Dun, New Forest, 700 m, 20–30 June 1981, C. Holzschuh leg. (NME); 2 males, Himalaya, Uttarkashi Distr., Gangani, 1300 m, 14–19 June 1981, C. Holzschuh leg. (NME); 1 female, *Uttaranchal*, ca 30 km N Bageshwar, Khati Vill. env., 2100–2300 m, 27–30 June 2003, Z. Kejval & M. Trýzna leg. (cZR); 1 female, ca 30 km Mussoori, Dakpathar Vill., Yamuna River env.,

790 m, 4 Aug. 2003, Z. Kejval & M. Trýzna leg. (cWR); 1 male, ca 13 km NW Nainital, Khairna Bridge, 900 m, river banks, light trap, 13–17 July 2003, Z. Kejval & M. Trýzna leg. (cWR), “*Dioryche braccata* (Bates), det. D.W. Wrase, 2007”; 1 male, *Union Territory of Puducherry*, “South India, Pondicherry State, Karikal”, “*Dioryche colombensis* (Nietner), Det. N. Ito 1996” (ZMB). **Nepal:** 1 male, 1 female, Dhaulagiri Himal, Ra-hugat Khola Valley, NW of Beni 800–1100 m, 7–8 May 2002, J. Schmidt leg. (cSCHM); 1 male, “Nepal–Himal, Kali-Gandaki-Fluss zw. Tatopani und Beni, ca 1000 m”, 29 Oct. 1992, J. Schmidt leg. (cSCHM); 1 male, Bheri Zone., Nepalganj, Hotel Batika, 28°02'59"N 81°36'56"E, 235 m, at light, 18 June 1999, Grill leg. (NME); 1 female, Bheri Zone., Banke Distr., Nepalganj, Hotel Sneha, 140 m, “LF”, 28°02'41"N 81°37'17"E, 14–15 June 2007, M. Hartmann leg. (NME); 2 females, Bheri Zone., Banke Distr., Nepalganj, Hotel Kitchen Hut, 140 m, 28°04'97"N 81°38'56"E, at light, “#02”, 23–25 June 2011, M. Hartmann leg. (NME); 2 females, Nawalparasi, Gaindakot, 3 km N Bharatpur, light trap, June 2004, “IAAS/SSMP-WG”, Y. Gc leg., “*Dioryche braccata* (Bates), det. D.W. Wrase, 2005” (cWR); 1 female, Chitwan, Gunganagar, 5 km W Rampur, light trap, 27°39'N 84°19'E, May 2005, D. Ahrens leg., “*Dioryche braccata* (Bates), det. D.W. Wrase, 2005” (cWR); 1 male, Mahakali Prov., Kanchanpur Distr., Mahendranagar, Hotel Sweet Dream, 28°58'13"N 81°11'01"E, 210 m, “LF”, “#60”, 2 July 2009, A. Kopetz leg. (NME). **Bhutan:** 1 female, Phobjika Valley, 2900 m, 9–10 Sept. 2008, T. Vereschagina & S. Sergievskij leg. (ZIN). **China:** 1 female, “Kiangsi [=Jiangxi]”, “*Dioryche braccata* (Bates), Det. N. Ito 1996” (ZMB).

Diagnosis. This species is similar in general habitus to *D. cuprina*, but it distinctly differs from the latter in the infuscate femora, more convex pronotum with the narrower apical portion of lateral depressions, shallower apical emargination and weakly prominent apical angles, shinier dorsum of both head and pronotum due to rather strongly obliterate microsculpture, rounded (not truncate) apex of anal sternite in male, and median lobe with much shorter terminal lamella and smaller apical capitulum.

Description. Body length 5.8–6.9 mm, width 2.3–2.7 mm. Dorsal habitus as in Fig. 2.

Body brownish black to black, with more or less vivid metallic green or bronze lustre on dorsum. Labrum entirely or externally, base of mandibles and very narrow lateral margins of pronotum often reddish brown. Palpi, antennae and tibiae brownish yellow; femora and trochanters blackish brown; tarsi brown; in most specimens antennomeres 3–11 and tibiae apically slightly infuscate.

Head moderately sized ($HW_{max}/PW_{max} = 0.69–0.74$ and $HW_{min}/PW_{max} = 0.54–0.57$ in males, $HW_{max}/PW_{max} = 0.72–0.74$ and $HW_{min}/PW_{max} = 0.55–0.61$ in females), in most specimens finely and sparsely punctate along inner margin of eyes, mainly around supraorbital setigerous pore. Eyes moderately convex ($HW_{max}/HW_{min} = 1.23–1.33$), separated from buccal fissure ventrally by distance equal to or slightly greater than width of antennomere 1. Tempora moderately long, somewhat convex, rather abruptly sloped to neck. Labrum slightly concave anteriorly. Frontal suture slightly deepened. Ligular sclerite narrow, not widened apically. Paraglossae wide, much extended beyond ligular sclerite. Antennae slender, surpassing pronotal base by one apical antennomere. Middle antennomeres (5–8) about 1.8–2.0 times as long as wide. Dorsal microsculpture consisting of strongly obliterate, more or less isodiametric meshes, on frons of male indistinct.

Pronotum ($PW_{max}/PL = 1.44–1.51$), widest in apical third, behind lateral setigerous pore ($PW_{max}/PW_{min} = 1.12–1.20$), with sides rather evenly rounded in apical half and almost rectilinearly converging (very widely rounded) basally. Apical margin moderately emarginate, bordered only laterally; basal margin slightly concave medially, very widely rounded or oblique laterally, bordered along entire length, slightly longer than apical margin and approximately equal to or slightly shorter than elytral base between humeral angles. Apical angles slightly protruding, rounded at apex. Basal angles obtuse, with tiny obtuse denticle at apex. Pronotal basal edge

glabrous, not ciliate. Lateral depressions very narrow from apical angle to lateral seta and evenly widened from lateral seta to base where they are fused with wide and rather shallow latero-basal depressions (as in Fig. 7). Basal foveae shallow, elongate, weakly delimited within latero-basal depressions. Pronotal disc moderately convex and evenly sloped to lateral depressions. Basal area between latero-basal depressions somewhat convex. Pronotal surface finely, densely and irregularly punctate basally and along sides (many punctures confluent) and more sparsely along apical margin; central part of disc either smooth or with scattered fine punctures mainly along median line; setae in punctures very short and hardly visible. Microsculpture in female consisting of distinct isodiametric meshes along margins and of more or less strongly obliterate meshes on disc, in male meshes obliterate throughout and usually indistinct on disc.

Elytra moderately convex, elongate (in male, $EL/EW = 1.52-1.65$, $EL/PL = 2.65-2.79$, $EW/PW_{max} = 1.13-1.23$; in female, these indices $1.50-1.62$, $2.65-2.85$ and $1.15-1.24$, respectively), widest at middle, very widely rounded or almost parallel at sides. Shoulders angulate, each with tiny acute denticle at apex (in many specimens visible dorsally). Elytral sides rounded just behind shoulders. Subapical sinuation moderately deep, without denticle at base. Sutural angle acute, in both sexes blunt at apex. Basal border glabrous, strongly and rather evenly sinuate along entire length, meeting lateral margin at nearly right angle. Striae impunctate, slightly impressed on disc and markedly deepened before apex. Parascutellar striole short, at most as long as width of second interval basally, with basal pore. Intervals wide and slightly convex basally, narrow and rather strongly convex before apex. All intervals near apex approximately equal in width. Intervals finely and sparsely punctate; punctuation on lateral intervals denser than on inner ones. Two or three lateral intervals covered with very short and fine setae. Third, fifth

and seventh intervals each with longitudinal row of distinct dorsal setigerous pores mostly not associated with striae (diameter of pores variable, half to one-fifth as great as width of interval). Lateral series of umbilicate setigerous pores widely interrupted at middle, posterior group of pores consisting of $(3+1) + 3$ pores. Dorsal microsculpture in both sexes visible throughout, consisting of distinct isodiametric meshes.

Hind wings fully developed.

All visible abdominal sternites, in addition to obligatory fixed setae, covered with very short scattered setae. Apex of anal sternite rounded in both sexes (as in Fig. 10).

Metacoxae finely punctulate and finely setose, without any additional setigerous pores. Metafemur with two setigerous pores at hind margin. Tarsi rather clearly setose dorsally. Metatarsomere 1 slender, approximately equal to metatarsomeres 2+3. In male, pro- and mesotarsomeres 1-4 comparatively weakly dilated, with biserrate adhesive vestiture ventrally; mesotarsomere 1 approximately as long as mesotarsomeres 2+3 and with adhesive scales only at apex.

Female genitalia (Figs 30, 31): hemisterite with two long and thick setae distally. Basal stylomere with one long and thick seta latero-distally. Apical stylomere shallowly curved, with one long and thin proximal seta at dorsal margin of scrobe.

Aedeagus: median lobe (Figs 22-25) bent in basal half, almost straight in apical half, with comparatively large oblique apical capitulum rather weakly protruding ventrally and rather strongly protruding dorsally (lateral aspect); dorsoapical flange situated more distally than ventroapical one. Terminal lamella moderately long, in dorsal aspect about three times as long as wide, slightly sinuate at sides and narrowed to apex. Internal sac with group of six comparatively large spines.

Distribution. Widely distributed in Southern Asia from Pakistan and India through Nepal and Bhutan to (?) Eastern China (Jiangxi). Because the record of *D. lucidula* from Jiangxi is based only on one

female specimen and there are no other records from China, the presence of this species in eastern China remains to be confirmed by additional material.

Remarks. *Selenophorus lucidulus* was described from one male specimen. In the original description, Dejean (1829) wrote that he did not know its exact geographical origin, but he noted that the specimen might be from the Antilles. Subsequent authors also assumed *S. lucidulus* to be a distinct *Selenophorus* species occurring in the West Indies (see, for example, Erwin & Sims, 1984; Noonan, 1985a; Lorenz, 1998, 2005). The type of *S. lucidulus* has apparently never been re-examined until now, because examination of the holotype has shown that this taxon actually belongs to the Oriental genus *Dioryche* and is conspecific with *D. braccata* (Bates, 1891), a species rather common in the Oriental Region, mostly in the northern part. Obviously, the holotype of *S. lucidulus* was also collected in the Oriental Region.

Bates (1891) proposed the name *braccatus* within the genus *Platymetopus* Dejean, 1829 for a variety of *P. colombensis* (= *Dioryche cuprina*) from Chota-Nagpore and Bombay, India, which is characterized by dark femora. Andrewes (1926, 1933) included this taxon in the genus *Dioryche* and also treated it as a variety of *D. colombensis*. Schauberger (1934) was the first to treat *D. braccata* as a distinct species differing from *D. colombensis* in the dark femora, shiny dorsum of both head and pronotum, and a specific shape of the apical capitulum of aedeagus.

Since Dejean's name of *lucidula* is older than Bates' name of *braccata*, the former is a valid name of this species.

Dioryche (Dioryche) dravidana sp. nov. (Figs 3, 11, 20, 21, 28, 29)

Holotype. Male, "S India, Shambaganur, Madora, 1921–146" (ZIN).

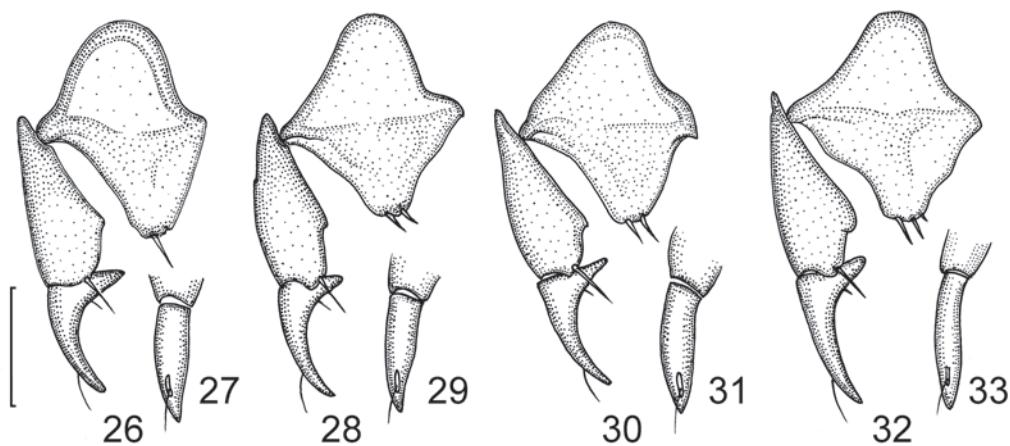
Paratype. Female, "S India, Mysore State, Shimoga Distr., 2000 ft, V.1987, Agumbe Ghat" (ZIN).

Diagnosis. This new species is similar to *D. lucidula* in the narrow pronotal lateral depressions and infuscate femora, but it differs from the latter in the more distinct microsculpture on head and pronotum, truncate apex of male anal abdominal sternite, and apical capitulum of aedeagus with ventroapical flange situated more distally than dorsoapical one. The new species is also similar to *D. cuprina* in the distinct microsculpture on head and pronotum and truncate apex of male anal abdominal sternite, but it differs from the latter species in the infuscate femora, narrower pronotal lateral depressions, and the aedeagus: its terminal lamella much shorter, and its apical capitulum with ventroapical flange situated more distally than dorsoapical one.

Description. Holotype: body length 5.9 mm, width 2.3 mm; paratype: 5.8 and 2.4 mm, respectively. Dorsal habitus as in Fig. 3.

Body black, with light copper (in holotype) or metallic green (in paratype) lustre on dorsum. Outer margins of labrum and very narrow lateral margins of pronotum reddish brown. Palpi, antennomeres 2–11, trochanters, femora and tarsi blackish brown; antennomeres 1–2 and tibiae paler, brownish yellow.

Head moderately sized ($HW_{max}/PW_{max} = 0.69$ and $HW_{min}/PW_{max} = 0.54$ in holotype, and $HW_{max}/PW_{max} = 0.72$ and $HW_{min}/PW_{max} = 0.57$ in paratype), with few fine punctures near supraorbital setigerous pore (in holotype) or impunctate (in paratype). Eyes moderately convex ($HW_{max}/HW_{min} = 1.25–1.27$), separated from buccal fissure ventrally by distance approximately equal to width of antennomere 1. Tempora moderately long, somewhat convex, sloped to neck. Labrum slightly concave anteriorly. Frontal suture superficial. Ligular sclerite narrow, not widened apically. Paraglossae wide, much extended beyond ligular sclerite. Antennae slender, surpassing pronotal base by one apical antennomere. Middle antennomeres (5–8) about 1.7–1.8 times as long as wide. Dorsal



Figs 26–33. *Dioryche*; hemisternite and stylus. 26, 27, *D. subrecta* sp. nov. (paratype, Uttar Pradesh); 28, 29, *D. dravidana* sp. nov. (paratype); 30, 31, *D. lucidula* (Uttar Pradesh); 32, 33, *D. cuprina* (India, Pondicherry). Ventral view (26, 28, 30, 32); lateral view (27, 29, 31, 33). Scale bar 0.5 mm.

microsculpture visible throughout, consisting of fine isodiametric meshes, slightly obliterate on frons.

Pronotum (PWmax/PL = 1.45–1.49), widest before middle and behind lateral setigerous pore (PWmax/PWmin = 1.16–1.19), with sides rounded along entire length but in basal half more widely. Apical margin moderately emarginate, bordered only laterally; basal margin more or less straight medially, very widely rounded laterally, bordered along entire length, slightly longer than apical margin and slightly shorter than elytral base between humeral angles. Apical angles moderately protruding, rounded at apex. Basal angles obtuse, with tiny obtuse denticle at blunt apex. Pronotal basal edge glabrous, not ciliate. Lateral depressions very narrow from apical angle to lateral seta and evenly widened from lateral seta to base where they are fused with wide and rather shallow latero-basal depressions (as in Fig. 7). Basal foveae shallow, oval, weakly delimited within latero-basal depressions. Pronotal disc moderately convex and evenly sloped to lateral depressions. Basal area between latero-basal depressions somewhat convex. Pronotal surface finely, densely and irregularly punctate basally and narrowly

along sides (many punctures confluent) and more sparsely along apical margin; central part of disc with scattered finer punctures; setae in punctures very short and hardly visible. Microsculpture visible throughout, consisting of distinct isodiametric meshes along margins and of obliterate, weakly transverse meshes on disc.

Elytra moderately convex, elongate (in male holotype, EL/EW = 1.52, EL/PL = 2.60, EW/PWmax = 1.18; in female paratype, these indices 1.52, 2.67 and 1.18, respectively), widest at middle, very widely rounded at sides. Shoulders angulate, each with tiny acute denticle at apex (visible from behind). Elytral sides rounded just behind shoulders. Subapical sinuation moderately deep, without denticle at base. Sutural angle acute, in both sexes blunt at apex. Basal border glabrous, strongly and rather evenly sinuate along entire length, meeting lateral margin at nearly right angle. Striae impunctate, slightly impressed on disc and markedly deepened before apex. Parascutellar striole short, approximately as long as width of second interval basally, with basal pore. Intervals largely wide and flat, narrow and markedly convex before apex (in paratype more convex than in holotype).

All intervals near apex approximately equal in width; fifth interval in holotype slightly sloped to fifth stria. All intervals distinctly and sparsely punctate; punctuation on lateral intervals denser than on inner ones. Two or three lateral intervals covered with very short and fine setae. Third, fifth and seventh intervals each with longitudinal row of comparatively large dorsal setigerous pores mostly not associated with striae (diameter of pores half or one-third as great as width of interval). Lateral series of umbilicate setigerous pores widely interrupted at middle, posterior group of pores divided in two subgroups (preapical and apical) consisting each of four and three pores respectively. Dorsal microsculpture in both sexes visible throughout, consisting of distinct, more or less isodiametric meshes.

Hind wings fully developed.

All visible abdominal sternites, in addition to obligatory fixed setae, covered with very short scattered setae. Apex of anal sternite truncate in male (Fig. 11) and rounded in female (as in Fig. 9).

Metacoxae finely punctulate and finely setose, without any additional setigerous pores. Metafemur with two setigerous pores at hind margin. Tarsi rather clearly setose dorsally. Metatarsomere 1 slender, approximately equal to metatarsomeres 2+3. In male, pro- and mesotarsomeres 1–4 comparatively weakly dilated, with biseriate adhesive vestiture ventrally; mesotarsomere 1 approximately as long as mesotarsomeres 2+3 and with adhesive scales apically.

Female genitalia (Figs 28, 29): hemisternite with two long and thick setae distally. Basal stylomere with one long and thick seta latero-distally. Apical stylomere weakly curved, with one long and thin proximal seta at dorsal margin of scrobe.

Aedeagus: median lobe (Figs 20, 21) weakly arcuate, with moderately large oblique apical capitulum approximately equally protruding ventrally and dorsally (lateral aspect); ventroapical flange situated more distally than dorsoapical one. Terminal lamella moderately long and narrow,

in dorsal aspect about 2.5 times as long as wide, evenly and rather weakly narrowed to apex. Internal sac with group of four comparatively large spines apically and group of three smaller spines medially.

Distribution. Known only from South India (Tamil Nadu and Karnataka).

Etymology. The species name refers to the Sanskrit word *drāvida* from which the name Dravidians has originated. This ethnic group lives mostly in South India where holotype and paratype of the new species were collected.

***Dioryche (Dioryche) nitidula* sp. nov.**
(Figs 4, 12, 16, 17)

Holotype. Male, "N India, Rajasthan, Jodhpur, 30.X.1989, S. Toms" (ZIN).

Paratype. Male, same data as for holotype, but collected 10 Oct. 1989 (ZIN).

Diagnosis. This new species is best recognized by shiny dorsum (due to strongly reduced microsculpture on head, pronotum and elytra) combined with the pronotum rather strongly narrowed basad. The species is also characterized by the very weakly dilated (more weakly than in other similar species) pro- and mesotarsomeres 1–4 in male, presence of short setae on the pronotal basal edge, and specific male genitalia. In addition, inner humeral angle of *D. nitidula* sp. nov. (formed by elytral basal border and lateral margin) is obtuse as compared to almost right one in *D. cuprina*, *D. lucidula* and *D. dravidana* sp. nov. The new species also differs from *D. cuprina* in the infuscate femora, narrower apical portion of pronotal lateral depressions, shallower pronotal apical emargination, less prominent pronotal apical angles, and rounded (not truncate) apex of male anal sternite. *D. nitidula* sp. nov. is similar to *D. lucidula* and *D. dravidana* sp. nov. in the infuscate femora and above-mentioned characters of pronotum, but it clearly differs from them in the strongly obliterate microsculpture on elytra, and additionally from the latter species, in the rounded apex of male anal sternite.

Description (based on male holotype and paratype only). Holotype: body length 6.5 mm, width 2.6 mm; paratype: 6.6 and 2.7 mm, respectively. Dorsal habitus as in Fig. 4.

Body reddish black, with rather vivid metallic green lustre on dorsum. Outer margins of labrum, base of mandibles, very narrow pronotal lateral margins and elytral epipleurae reddish brown. Palpi, antennae and legs brownish yellow; femora more strongly and antennomeres 3–11 and tarsi less strongly infuscate.

Head moderately sized ($HW_{max}/PW_{max} = 0.72$ and $HW_{min}/PW_{max} = 0.58$ in holotype, and $HW_{max}/PW_{max} = 0.74$ and $HW_{min}/PW_{max} = 0.57$ in paratype), with few fine punctures along inner margin of eyes and scattered micropunctures on frons (in holotype) or head almost impunctate (in paratype). Eyes moderately convex ($HW_{max}/HW_{min} = 1.25–1.29$), separated from buccal fissure ventrally by distance slightly greater than width of antennomere 1. Tempora moderately long, somewhat convex, sloped to neck. Labrum slightly concave anteriorly. Frontal suture slightly impressed. Ligular sclerite narrow, not widened apically. Paraglossae wide, much extended beyond ligular sclerite. Antennae slender, surpassing pronotal base by one apical antennomere. Middle antennomeres (5–8) about 2.0–2.5 times as long as wide. Dorsal microsculpture visible only along apical margin of clypeus and on narrow area along inner margin of eyes, consisting of very fine isodiametric meshes.

Pronotum ($PW_{max}/PL = 1.47–1.50$), widest before middle and behind lateral setigerous pore, markedly narrowed basad ($PW_{max}/PW_{min} = 1.25–1.27$), with sides rounded in apical half and almost rectilinearly converging posteriad in basal half. Apical margin moderately emarginate, bordered only laterally; basal margin more or less straight, bordered along entire length, slightly shorter than elytral base between humeral angles and slightly longer than (in holotype) or approximately equal to

(in paratype) apical margin. Apical angles comparatively weakly protruding, rounded at apex. Basal angles more than 90° , rather sharp, with tiny obtuse denticle at apex. Pronotal basal edge ciliate. Lateral depressions very narrow in apical two-thirds and evenly widened in basal third where they are fused with wide and shallow latero-basal depressions (as in Fig. 7). Basal foveae shallow and oval, located within latero-basal depressions. Pronotal disc moderately convex, evenly sloped to lateral depressions. Basal area between latero-basal depressions somewhat convex. Pronotal surface finely, densely and irregularly punctate basally and narrowly along sides, with scattered punctures along apical margin; central part of disc with scattered fine punctures in holotype and smooth in paratype; setae in punctures very short and hardly visible. Microsculpture highly reduced; more or less distinct isodiametric or weakly transverse meshes visible along pronotal margins; meshes scarcely visible (in holotype) or absent (in paratype) on disc.

Elytra moderately convex, elongate (in holotype, $EL/EW = 1.49$, $EL/PL = 2.60$, $EW/PW_{max} = 1.16$; in paratype, these indices 1.49, 2.55 and 1.16, respectively), widest behind middle, with sides slightly diverging in middle portion. Shoulders weakly prominent, each with tiny acute denticle at apex (visible from behind). Elytral sides rounded just behind shoulders. Subapical sinuation moderately deep, without denticle at base. Sutural angle acute, slightly blunted at apex. Basal border glabrous, moderately and rather evenly sinuate along entire length, meeting lateral margin at distinct obtuse angle. Striae impunctate, slightly impressed on disc and markedly deepened before apex. Parascutellar striae short, approximately as long as width of second interval basally, with basal pore. Intervals wide and weakly convex, almost flat on disc, narrow and markedly convex before apex. All intervals near apex approximately equal in width. Intervals on disc very finely and sparsely punctate; puncta-

tion on lateral intervals much coarser and denser than on inner ones. Three lateral intervals covered with very short and fine setae. Third, fifth and seventh intervals each with longitudinal row of dorsal setigerous pores mostly not associated with striae (diameter of pores about one-third as great as width of interval). Lateral series of umbilicate setigerous pores widely interrupted at middle, posterior group of pores divided in two subgroups (preapical and apical) consisting each of four and three pores respectively. Dorsal microsculpture throughout very fine, consisting of strongly obliterate, weakly transverse meshes.

Hind wings fully developed.

All visible abdominal sternites, in addition to obligatory fixed setae, covered with very short scattered setae. Apex of anal sternite (in male) rounded (Fig. 12).

Metacoxae finely punctulate and finely setose, without any additional setigerous pores. Metafemur with two setigerous pores at hind margin. Tarsi rather sparsely and finely setose dorsally. Metatarsomere 1 slender, approximately equal to metatarsomeres 2+3. In male, pro- and mesotarsomeres 1–4 very weakly dilated (more weakly than in other related species), with biseriate adhesive vestiture ventrally; mesotarsomere 1 approximately as long as mesotarsomeres 2+3 and with adhesive scales apically.

Aedeagus: median lobe (Figs 16, 17) weakly arcuate, with comparatively small oblique apical capitulum slightly protruding ventrally (lateral aspect). Terminal lamella moderately long and narrow, slightly curved ventrad; in dorsal aspect about 3.5 times as long as wide, notably narrowed at middle and rounded at apex. Internal sac with two very large and one medium spines apically and two large spines medially.

Distribution. Known only from Northern India (Rajasthan).

Etymology. The species epithet means “slightly shining” in Latin and refers to the metallic lustre on the dorsum of the new species.

***Dioryche (Dioryche) subrecta* sp. nov.**
(Figs 5, 7, 13, 18, 19, 26, 27)

Holotype. Male, “North Pakistan, Besham, 5.1993, S. Prepsl leg.” (ZIN).

Paratypes. **Pakistan:** 1 male, “NW Pakistan, Prov. Swat, 71°90'N, 45°70'E, Magyan, 1400 m, at light”, 19 June – 4 July 1971, C. Holzschuh leg. (cWWR). **India:** 2 males, *Uttarkhand*, Haridwar Distr., environs of Chilla, 300 m, forest on coast Ganga River, 29°58'09"N, 78°12'16.2"E – 28°58'38.9"N, 78°12'54.3"E, 14–16 Apr. 2012, I. Melnik leg. (ZIN); 1 female, “India bor., Uttar Pradesh, Hardiwar Chila”, 4–14 May 1994, Snižek leg. (cWWR); 3 males, 3 females, “Himalaya, Uttar Pradesh, Uttarkashi Distr., Gangani, 1300 m”, 14–19 June 1981, C. Holzschuh leg. (NME). **Nepal:** 1 female, Chitwan, Trisuli River, 12 km ESE of Mugling, 255 m, 27°49.20'N, 84°26.65'E, 24 Apr. 2000, expedition A. Konstantinov, S. Lindgafelter & M. Volkovitsh leg. (ZIN); 1 female, Chitwan Distr., Sauraha, ca 700 m, SE of Sauraha, 27.570°N, 84.496°E, 190 m, 13 Oct. 2010, F. Walther leg. (NME).

Diagnosis. This new species is very similar in appearance to *D. lucidula*, but it clearly differs from the latter in the pale (not infuscate) femora and obtuse inner humeral angle. In addition, males of *D. subrecta* sp. nov. are distinguished from those of *D. lucidula* by the slightly emarginate apex of anal sternite and very peculiar shape of the aedeagus having the almost straight median lobe lacking apical capitulum.

Description. Body length 6.1–6.8 mm, width 2.5–2.8 mm. Dorsal habitus as in Fig. 5.

Body brownish black to black, with light metallic green or copper lustre on dorsum, at least along elytral margins. Labrum entirely or externally, base of mandibles and very narrow lateral margins of pronotum often reddish brown. Palpi, antennae and tibiae brownish yellow, at most antennomeres 3–11 or 4–11, tibiae apically and tarsi slightly infuscate.

Head moderately sized (HW_{max}/PW_{max} = 0.69–0.71 and HW_{min}/PW_{max} = 0.52–0.56 in males, and HW_{max}/PW_{max} = 0.68–0.73 and HW_{min}/PW_{max} = 0.53–0.59 in females), smooth or

with few very fine punctures at supraorbital setigerous pore. Eyes moderately convex ($HW_{max}/HW_{min} = 1.23-1.33$), separated from buccal fissure ventrally by distance equal to or slightly greater than width of antennomere 1. Tempora moderately long, somewhat convex, rather abruptly sloped to neck. Labrum slightly concave anteriorly. Frontal suture slightly impressed. Ligular sclerite narrow, narrowed apicad. Paraglossae wide, much extended beyond ligular sclerite. Antennae slender, surpassing pronotal base by one apical antennomere. Middle antennomeres (5-8) about 1.8-2.0 times as long as wide. Dorsal microsculpture visible throughout, in both sexes consisting of more or less obliterate isodiametric meshes.

Pronotum ($PW_{max}/PL = 1.43-1.52$), widest in apical third, just behind lateral setigerous pore ($PW_{max}/PW_{min} = 1.12-1.20$), with sides in basal half either very widely rounded or almost rectilinearly converging posteriad. Apical margin moderately emarginate, bordered only laterally; basal margin more or less straight or slightly concave medially, bordered along entire length, slightly longer than apical margin and slightly shorter than elytral base between humeral angles. Apical angles slightly protruding, rounded at apex. Basal angles obtuse, with tiny obtuse denticle at sharp apex. Pronotal basal edge glabrous, not ciliate. Lateral depressions (Fig. 7) very narrow from apical angle to lateral seta and evenly widened from lateral seta to base where they are fused with wide and rather shallow latero-basal depressions. Basal foveae shallow, oval, usually weakly delimited within latero-basal depressions. Pronotal disc moderately convex and evenly sloped to lateral depressions. Basal area between latero-basal depressions somewhat convex. Pronotal surface rather densely and irregularly punctate basally and in lateral depressions, in most specimens also, but more sparsely, along apical margin; central part of disc usually smooth, occasionally with very fine scattered punctures; setae in punctures very short and hardly visible. Microsculpture in

both sexes visible throughout, consisting of fine, more or less obliterate isodiametric meshes.

Elytra moderately convex, elongate (in male, $EL/EW = 1.52-1.65$, $EL/PL = 2.65-2.79$, $EW/PW_{max} = 1.13-1.23$; in female, these indices 1.52-1.62, 2.65-2.85 and 1.15-1.22, respectively), widest behind middle, with sides slightly diverging in middle portion. Shoulders angulate, each with tiny acute denticle at apex (in many specimens visible dorsally); elytral sides rounded just behind shoulders. Subapical sinuation moderately deep, without denticle at base. Sutural angle acute, in both sexes either somewhat sharp or slightly blunted at apex. Basal border glabrous, moderately sinuate along entire length, meeting lateral margin at distinct obtuse angle. Striae impunctate, slightly impressed on disc and markedly deepened before apex. Parascutellar striole short, at most as long as width of second interval basally, with basal pore. Intervals wide and slightly convex basally, narrow and rather strongly convex before apex. All intervals near apex approximately equal in width. Intervals very finely and sparsely punctate; punctuation on two or three lateral intervals denser and coarser than on inner ones. Two or three lateral intervals covered with very short and fine setae. Third, fifth and seventh intervals each with longitudinal row of distinct dorsal setigerous pores mostly not associated with striae (diameter of pores one-quarter to one-third as great as width of interval). Lateral series of umbilicate setigerous pores widely interrupted at middle, posterior group of pores consisting of four and three pores, respectively. Dorsal microsculpture in both sexes visible throughout, consisting of distinct isodiametric meshes.

Hind wings fully developed.

All visible abdominal sternites, in addition to obligatory fixed setae, covered with very short scattered setae. Apex of anal sternite slightly emarginate in male (Fig. 13) and rounded in female (as in Fig. 9).

Metacoxae finely punctulate and finely setose, without any additional setigerous pores. Metafemur with two setigerous pores at hind margin. Tarsi rather clearly setose dorsally. Metatarsomere 1 slender, approximately equal to metatarsomeres 2+3. In male, pro- and mesotarsomeres 1–4 comparatively weakly dilated, with biseriate adhesive vestiture ventrally; mesotarsomere 1 approximately as long as mesotarsomeres 2+3 and with adhesive scales only in apical half.

Female genitalia (Figs 26, 27): hemisternite with one long and thick seta distally. Basal stylomere with one long and thick seta latero-distally. Apical stylomere curved, with one long and thin proximal seta at dorsal margin of scrobe.

Aedeagus: median lobe (Figs 18, 19) not bent in basal half, almost straight, with apex curved ventrad and without apical capitulum; ventral margin of median lobe rather strongly convex at middle. Terminal lamella triangular, approximately as long as wide, rounded to apex. Internal sac with four very small spines in apical half.

Distribution. Known from Pakistan, Northern India (Uttarkhand), and Nepal (Chitwan).

Etymology. The species epithet is a Latin name consisting of the preposition “*sub*–” and the adjective “*rectus*” (= straight), referring to a somewhat straight shape of the median lobe of the aedeagus of the new species.

The following key can be used for identification of species of *Dioryche* similar to *D. cuprina* (species with elytral intervals near apex convex and of nearly the same width; and with parascutellar striole short, at most as long as width of second interval basally):

1. Femora pale, brownish yellow, not darker than tibiae 2
- Femora dark, notably darker than tibiae ... 3
2. Elytral basal border meeting lateral margin at nearly right angle. Pronotum with deep apical emargination and distinct, at most only slightly obliterate microsculpture on disc; pronotal lateral depression moderately

wide in its apical portion (Fig. 6). Median lobe of aedeagus as in Figs 14, 15 *D. cuprina*

- Elytral basal border meeting lateral margin at distinct obtuse angle. Pronotum with shallow apical emargination and obliterate microsculpture on disc; pronotal lateral depression very narrow in its apical portion (Fig. 7). Median lobe of aedeagus as in Figs 18, 19 *D. subrecta* sp. nov.
3. Elytral basal border meeting lateral margin at distinct obtuse angle. Pronotal basal edge ciliate. Elytral microsculpture consisting of scarcely visible, weakly transverse meshes. Pronotum markedly narrowed basad. Male anal sternite rounded at apex (Fig. 12). Median lobe of aedeagus as in Figs 16, 17 *D. nitidula* sp. nov.
- Elytral basal border meeting lateral margin at nearly right angle. Pronotal basal edge glabrous. Elytral microsculpture consisting of distinct isodiametric meshes. Pronotum comparatively weakly narrowed basad. Male anal sternite rounded or truncate at apex 4
4. Pronotal microsculpture more distinct, in both sexes visible throughout, consisting of slightly obliterate meshes. Male anal sternite truncate at apex (Fig. 11). Median lobe of aedeagus as in Figs 20, 21 *D. dravidana* sp. nov.
- Pronotal microsculpture less distinct, in female consisting of strongly obliterate, weakly transverse meshes, in male often absent on disc. Male anal sternite rounded at apex (Fig. 10). Median lobe of aedeagus as in Figs 22–25 *D. lucidula*

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